

Comparisons of Job Characteristics

Focus Occupation: Welders, Cutters, Solderers, and Brazers (51-4121)

Associated Occupation: Machinists (51-4041)

[Compare Knowledge](#)

[Compare Skills](#)

[Compare Abilities](#)

[Compare Detailed Work Activities](#)

[Compare Tools and Technologies](#)

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 95

Focus Occupation: Welders, Cutters, Solderers, and Brazers (51-4121)

Associated Occupation: Machinists (51-4041)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Mechanical	6.8	18.0	9.5	<<	Extensive education and/or training may be required
Mathematics	9.2	14.2	6.4	<<	Extensive education and/or training may be required
Production and Processing	6.0	12.7	6.4	<<	Extensive education and/or training may be required
Design	5.2	11.2	6.0	<<	Extensive education and/or training may be required
Engineering and Technology	5.7	10.2	6.4	<<	Extensive education and/or training may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 76

Focus Occupation: Welders, Cutters, Solderers, and Brazers (51-4121)

Associated Occupation: Machinists (51-4041)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Quality Control Analysis	5.9	12.6	7.4	<<	Extensive development of skills in this area may be required
Operation Monitoring	6.6	12.0	7.8	<<	Extensive development of skills in this area may be required
Operation and Control	5.4	11.1	5.9	<<	Extensive development of skills in this area may be required
Troubleshooting	4.5	10.2	6.2	<<	Extensive development of skills in this area may be required

Equipment Maintenance	3.5	9.3	5.9	<<	Extensive development of skills in this area may be required
Equipment Selection	3.3	8.6	5.4	<<	Extensive development of skills in this area may be required
Repairing	3.4	8.5	5.9	<<	Extensive development of skills in this area may be required
Installation	1.7	6.0	1.6	<<	Extensive development of skills in this area may be required
Technology Design	2.6	6.0	1.8	<<	Extensive development of skills in this area may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities		Similarity of Focus Occupation to Associated Occupation: 85			
Focus Occupation: Welders, Cutters, Solderers, and Brazers (51-4121) Associated Occupation: Machinists (51-4041)					
Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Control Precision	6.6	13.3	9.5	<<	Extensive improvement in abilities may be required
Finger Dexterity	7.6	11.6	9.7	<	Some improvement in abilities may be required
Manual Dexterity	6.5	11.1	10.3	0	Current ability level may be sufficient
Multilimb Coordination	6.0	10.7	7.4	<<	Extensive improvement in abilities may be required
Reaction Time	4.8	10.1	7.1	<<	Extensive improvement in abilities may be required
Hearing Sensitivity	5.6	9.3	5.5	<<	Extensive improvement in abilities may be required
Rate Control	3.8	8.6	4.7	<<	Extensive improvement in abilities may be required
Wrist-Finger Speed	3.2	7.3	3.6	<<	Extensive improvement in abilities may be required
Sound Localization	2.2	6.2	1.7	<<	Extensive improvement in abilities may be required
Speed of Limb Movement	3.2	6.1	3.4	<<	Extensive improvement in abilities may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common		Similarity of Focus Occupation to Associated Occupation: 77
Focus Occupation: Welders, Cutters, Solderers, and Brazers (51-4121) Associated Occupation: Machinists (51-4041)		
Work Activities		Exclusivity of Activity

Examine products or work to verify conformance to specifications	15
Fabricate, assemble, or disassemble manufactured products by hand	11
Identify base metals for welding	68
Lay out machining, welding or precision assembly projects	63
Load or unload material or workpiece into machinery	34
Maintain welding machines or equipment	70
Monitor production machinery/equipment operation to detect problems	27
Move or fit heavy objects	8
Operate metal or plastic fabricating equipment/machinery	54
Read blueprints	10
Read specifications	23
Read technical drawings	7
Recognize characteristics of alloys	71
Recognize characteristics of metals	62
Understand technical operating, service or repair manuals	6
Use arc welding equipment	62
Use hand or power tools	2
Use non-destructive test equipment	82
Use precision measuring tools or equipment	17
Weld together metal parts, components, or structures	54

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus
Occupation to Associated
Occupation: 86

Focus Occupation: Welders, Cutters, Solderers, and Brazers (51-4121)
Associated Occupation: Machinists (51-4041)

Tools and Technologies	Exclusivity
Aerial lifts	13
Bandsaws and accessories	26
Business function specific software	1
Computer printers	2
Computers	1
Content authoring and editing software	1
Cutting and crimping and punching tools	3
Cutting tools	18
Drafting supplies	9
Face and head protection	7
Forming tools	2
Holding and clamping tools	3
Hydraulic presses	25
Industry specific software	1
Ladders and scaffolding	6
Length and thickness and distance measuring instruments	2

Lifting equipment and accessories	3
Machine tools	7
Machinery for working wood and stone and ceramic and the like	12
Marking tools	11
Measuring and layout tools	3
Metal bending and forming machinery	17
Metal working machinery attachments	35
Pneumatic tools	8
Power tools	2
Prying and bending tools	10
Rough and finishing tools	5
Soldering and brazing and welding machinery and supplies	6
Tool attachments and accessories	12
Vision protection and accessories	3
Wrenches and drivers	2

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.